



**National Institute of Technology, Tiruchirappalli:  
Performa for CV of Faculty/ Staff Members**

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				Discontinuous Galerkin Method for Singularly Perturbed Differential Equations
M.Sc.	IIT Guwahati	2013-2015	First	Mathematics and Computing
B.Sc.	Banaras Hindu University, Varanasi	2010-2013	First	Mathematics (Hons)
12th	UP Board	2007-2009	First	Science
10th	UP Board	2005-2007	First	Science

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2010-2015	<i>Inspire Scholarship</i>	Department of Science and Technology
2018	<i>Best Oral Presentation Award</i>	Research Conclave'18, IIT Guwahati.

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2015	Graduate Aptitude Test in Engineering in	MHRD	07/2015	07/2020

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	Mathematics ( <b>GATE</b> )			
2015	UGC-CSIR <b>NET</b> in Mathematics	CSIR	12/2015	

13. Details of Academic Work

- (i) Curriculum Development
- (ii) Courses taught at Postgraduate and Undergraduate levels
  - (a)- Partial Differential Equations
  - (b)- Numerical and Statistical Methods
  - (c)- Computational Mathematics
  - (d)- Discrete Mathematics
  - (e)- Mathematics II

- (iii) Projects guided at Postgraduate level
- (iv) Other contribution(s)

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)

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2013	Summer Internship	National	Worked on a project entitled linear partial differential equation during May-July 2013 as a summer research fellow under the supervision of <b>Dr. Venky Krishnan, TIFR Centre for Applicable Mathematics, Bangalore.</b>
2015	Workshop	National	Participated in the workshop on computational techniques for differential equations with MATLAB at the department of mathematics, <b>IIT Roorkee, Uttarakhand, India during July 02-06, 2015.</b>
2016	Workshop	National	Attended workshop on singularly perturbed partial differential equations (SPPDEs): theory, computation and application (AWSPDES 2016 ) at the <b>Department of Mathematics and Statistics, IIT Kanpur, Uttar Pradesh, India during March 24-28, 2016.</b>
2018	Conference	International	A uniform convergent NIPG method for a singularly perturbed system of reaction-diffusion BVPs. <b>4th International Conference on Mathematics and Computing (ICMC-2018) at IIT BHU, Varanasi.</b>
2018	Conference	International	NIPG method for two parameter singular perturbation problems. <b>2nd International Conference on Advance in Computational Mathematics (ICACM-2018) at Tribhuvan University, Kathmandu, Nepal.</b>
2019	Conference	National	<i>Superconvergence properties of discontinuous Galerkin method with interior penalties for singularly perturbed problems.</i> <b>34th Annual National Conference of BHU (NCMS-2019) at BHU Varanasi.</b>
2019	Conference	International	Superconvergence of discontinuous Galerkin method for non-stationary convection-diffusion-reaction problems. <b>Indo-German Conference on Computational Mathematics (IGCM 2019) at IISC, Bangalore.</b>

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue

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18. Invited Talks delivered

Topic	Date	Inviting Organization

19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member )	Organization	Membership No. with date

20. Academic Foreign Visits

Country	Duration of Visit	Programme

21. Publications

(A) Refereed Research Journals:

Author(s)	Title of Paper
G. Singh and S. Natesan	Superconvergence of discontinuous Galerkin method with interior penalties for singularly perturbed two-point boundary-value problems. <b><i>Calcolo</i>, 55(4):54,2018.</b>
G. Singh and S. Natesan	Study of the NIPG method for two-parameter singular perturbation problems on several layer adapted grids. <b><i>J. Appl. Math. Comput.</i>, 63(1--2):683-705, 2020.</b>
G. Singh and S. Natesan	A uniformly convergent numerical scheme for a coupled system of singularly perturbed reaction-diffusion equations. <b><i>Numer. Fun. Anal. Opt.</i>, 41(10):1172-</b>

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	<i>1189, 2020.</i>
M. K. Singh and G. Singh & S. Natesan.	A unified study on superconvergence analysis of Galerkin FEM for singularly perturbed system of multi-scale nature. <i>J. Appl. Math. Comput.</i> , <b>66:221-243, 2021.</b>
A. Sendur, S. Natesan and G. Singh.	Error estimates for a fully discrete $\varepsilon$ -uniform finite element method on quasi uniform meshes. <i>Haceteepe J. Math, Stat.</i> , <b>50(5):1306-1324, 2021.</b>
G. Singh and S. Natesan	Superconvergence properties of discontinuous Galerkin time stepping for singularly perturbed parabolic problems. <i>Numer. Algorithms.</i> , <b>2021.</b> <a href="https://doi.org/10.1007/s11075-021-01222-6">https://doi.org/10.1007/s11075-021-01222-6</a>

**(B) Conferences/Workshops/Symposia Proceedings**

Author(s)	Title of the Proceedings	Venue
G. Singh and S. Natesan	A uniformly convergent NIPG method for a singularly perturbed system of reaction-diffusion boundary-value problems. <i>Springer Proc. Math. Stat.</i> , <b>253:429-440, 2018.</b>	IIT BHU Varanasi

**(C) Books & Monographs**

Author(s)	Title of Book/Monograph	Name of Publishers	Year of Publication	ISSN/ISBN Number